

WHAT IS CLAIMED IS:

1. An apparatus for communicating packets in a network environment, comprising:

5 a first network element that includes a first neighbor list, the first network element being coupled to a second network element and a third network element, the first network element being operable to receive a second neighbor list from the second network element and a third neighbor list from the third network element, wherein the  
10 first network element is further operable to determine one or more overlaps provided by the second and third neighbor lists when compared to the first neighbor list, the first network element relaying an update that it receives based on the one or more overlaps.

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2. The apparatus of Claim 1, wherein the first network element includes a link state database operable to store the first neighbor list.

20 3. The apparatus of Claim 1, wherein if the first neighbor list and the second neighbor list overlap completely, then the first network element does not relay the update when it is received from the second network element.

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4. The apparatus of Claim 1, wherein the update is provided in a routing protocol packet that includes an origin associated with the update.

5        5.     The apparatus of Claim 1, wherein if the first neighbor list and the second neighbor list do not overlap completely and the first network element is designated as active, then the first network element relays the update when it is received from the second network element.

10       6.     The apparatus of Claim 1, wherein if the first neighbor list and the second neighbor list do not overlap completely and the first network element is designated as non-active, then the first network element waits a selected time interval before determining whether to relay the update.

15       7.     The apparatus of Claim 6, wherein the selected time interval is substantially equal to a pushback time plus a jitter time.

20       8.     The apparatus of Claim 1, wherein if the first network element determines that its relaying of the update will result in a redundant transmission, the first network element will suppress the relaying of the update.

25       9.     The apparatus of Claim 1, wherein the first network element is operable to determine whether its relaying of the update will result in a redundant transmission by gleaning data associated with a selected one of an acknowledgement and a re-flood both of which are associated with the update, the acknowledgement and the re-flood being communicated by one or more non-  
30     overlapping neighbors.

10. The apparatus of Claim 1, wherein the first network element includes an algorithm that is operable to determine the one or more overlaps provided by the second and third neighbor lists when compared to the first  
5 neighbor list, the algorithm being invoked in order to determine whether the first network element should relay the update that it receives.

11. A method for communicating packets in a network environment, comprising:

receiving, by a first network element that includes a first neighbor list, a second neighbor list from a  
5 second network element and a third neighbor list from a third network element; and

determining one or more overlaps provided by the second and third neighbor lists when compared to the first neighbor list, the first network element relaying  
10 an update that it receives based on the one or more overlaps.

12. The method of Claim 11, further comprising:

storing the first neighbor list in a link state  
15 database provided in the first network element.

13. The method of Claim 11, wherein if the first neighbor list and the second neighbor list overlap completely, then the first network element does not relay  
20 the update when it is received from the second network element.

14. The method of Claim 11, wherein if the first neighbor list and the second neighbor list do not overlap  
25 completely and the first network element is designated as active, then the first network element relays the update when it is received from the second network element.

15. The method of Claim 11, wherein if the first neighbor list and the second neighbor list do not overlap completely and the first network element is designated as non-active, then the first network element waits a  
5 selected time interval before determining whether to relay the update.

16. The method of Claim 15, wherein the selected time interval is substantially equal to a pushback time  
10 plus a jitter time.

17. The method of Claim 11, wherein if the first network element determines that its relaying of the update will result in a redundant transmission, the first  
15 network element will suppress the relaying of the update.

18. The method of Claim 11, further comprising:  
determining whether relaying of the update by the first network element will result in a redundant  
20 transmission by gleaning data associated with a selected one of an acknowledgement and a re-flood both of which are associated with the update, the acknowledgement and the re-flood being communicated by one or more non-overlapping neighbors.

19. A system for communicating packets in a network environment, comprising:

means for receiving a first neighbor list from a first network element and a second neighbor list from a  
5 second network element; and

means for determining one or more overlaps provided by the first and second neighbor lists when compared to a third neighbor list, a third network element relaying an update that it receives from the first network element  
10 based on the one or more overlaps.

20. The system of Claim 19, further comprising:

means for storing the third neighbor list the third network element.

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21. The system of Claim 19, wherein if the first neighbor list and the third neighbor list overlap completely, then the third network element does not relay the update when it is received from the first network  
20 element.

22. The system of Claim 19, wherein if the first neighbor list and the third neighbor list do not overlap completely and the third network element is designated as  
25 active, then the third network element relays the update when it is received from the first network element.

23. The system of Claim 19, wherein if the first neighbor list and the third neighbor list do not overlap  
30 completely and the third network element is designated as non-active, then the third network element waits a selected time interval before determining whether to relay the update.

24. The system of Claim 19, wherein if the third network element determines that its relaying of the update will result in a redundant transmission, the third network element will suppress the relaying of the update.

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25. The system of Claim 19, further comprising:

means for determining whether relaying of the update by the third network element will result in a redundant transmission by gleaning data associated with a selected one of an acknowledgement and a re-flood both of which are associated with the update, the acknowledgement and the re-flood being communicated by one or more non-overlapping neighbors.

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26. Software for communicating packets in a network environment, the software being embodied in a computer readable medium and comprising computer code such that when executed is operable to:

5       receive a first neighbor list from a first network element and a second neighbor list from a second network element; and

          determine one or more overlaps provided by the first and second neighbor lists when compared to a third  
10 neighbor list, a third network element relaying an update that it receives from the first network element based on the one or more overlaps.

27. The medium of Claim 26, wherein the code is  
15 further operable to:

          store the third neighbor list in a link state database provided in the third network element.

28. The medium of Claim 26, wherein if the first  
20 neighbor list and the third neighbor list overlap completely, then the third network element does not relay the update when it is received from the first network element.

25       29. The medium of Claim 26, wherein if the first neighbor list and the third neighbor list do not overlap completely and the third network element is designated as active, then the third network element relays the update when it is received from the first network element.



30. The medium of Claim 26, wherein if the first neighbor list and the third neighbor list do not overlap completely and the third network element is designated as non-active, then the third network element waits a  
5 selected time interval before determining whether to relay the update.

31. The medium of Claim 26, wherein if the third network element determines that its relaying of the  
10 update will result in a redundant transmission, the third network element will suppress the relaying of the update.

32. The medium of Claim 26, wherein the code is further operable to:  
15 determine whether relaying of the update by the third network element will result in a redundant transmission by gleaning data associated with a selected one of an acknowledgement and a re-flood both of which are associated with the update, the acknowledgement and  
20 the re-flood being communicated by one or more non-overlapping neighbors.